

II. Remarks

A. Status of Claims

Claims 1, and 3-27 are pending. Claims 1 and 17 are amended. Claim 2 is cancelled. Claims 9-16 are withdrawn. Accordingly, no new matter has been added.

Support for amended claim 1 is found in originally filed claims 2 and 17, in the specification on page 19, lines 10-17, and page 34, lines 3- 7, as well as elsewhere throughout the specification.

B. Interview

Applicant thanks the Examiner for the courtesies extended to Applicant's representative during the interview on August 27, 2008, in which the outstanding rejection was discussed. Applicant's separate record of the substance of the interview is contained in the comments below.

C. Claim Rejections Under 35 U.S.C. § 102

1. Groth Fails to Teach or Suggest Every Element

Claims 1-8, and 17-27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Groth, "Test on Semi-Conductive Indium Oxide Films," *Phys. Stat Sol.*, 14/69 (1966) (hereinafter "Groth") or, in the alternative, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the same reference. Applicant thanks the Examiner for providing a full English translation of Groth. Applicant traverses this rejection based on the above-amendments and following remarks.

Independent Claim 1, as amended, recites a transparent oxide electrode film "wherein indium in said indium oxide is substituted with titanium at a titanium/indium atomic ratio between **0.003 and 0.050**," "the resistivity of said transparent oxide electrode film is up to **4.0 x 10⁻⁴ Ωcm**," and "wherein said transparent oxide electrode film is manufactured using a **sputtering method**." As discussed during the Interview, Groth uses a spraying method to form the transparent oxide electrode film which is different than the sputtering method as claimed. (See Groth pages 3-6). Further, the amount of titanium in Groth is disclosed as 6-10 At%, which is greater than the titanium/indium atomic ratio between 0.003 and 0.050 as claimed. In addition, the Office Action cites Groth for teaching a conductivity of $4.3 \times 10^{-3} \text{ 1/}\Omega\text{cm}$

(resistivity of $2.3 \times 10^{-4} \Omega\text{cm}$). However, Groth states on page 6 that this amount is for a transparent oxide electrode film comprising tin. Tin is specifically excluded from the claims. Groth fails to teach a conductivity value, i.e., resistivity value, as claimed. Therefore, for at least these reasons, Groth fails to teach or suggest every element, and thus Claim 1 is patentable over Groth.

2. Delahoy is Unavailable as a Reference Under 35 U.S.C. § 102

Claims 1-8, and 17-27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Delahoy and Guo, “Transparent and semitransparent conducting film deposition by reactive-environment, hollow cathode sputtering,” *J. Vac. Sci. Technol. A* 23(4) (2005) (hereinafter “Delahoy”) or, in the alternative, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the same reference.

Delahoy was published in July/August 2005. The present application was filed on October 2, 2003. Thus, as agreed during the interview, Delahoy is unavailable as a reference under 35 U.S.C. § 102 and the rejection must be withdrawn.

3. Safi Fails to Teach or Suggest Every Element

Claims 1-8, and 17-27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Safi, “The properties of reactively-sputtered, stoichiometry-controlled and optimum-conductivity transparent indium oxide films as a function of their titanium, aluminum and zinc content; comparisons with the use of tin as a dopant,” *Thin Solid Films* 343-344 (1999) page 115-118 (hereinafter “Safi”) or, in the alternative, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the same reference. Applicant traverses this rejection based on the above-amendments and following remarks.

Independent Claim 1, as amended, recites a transparent oxide electrode film “wherein indium in said indium oxide is substituted with titanium at a titanium/indium atomic ratio between **0.003 and 0.050**,” and “wherein said transparent oxide electrode film is manufactured using a **sputtering method using a sputtering target manufactured from an oxide sintered body**.” As discussed during the Interview, Safi uses successive plasma anodization (SPA) method to form the transparent oxide electrode film which is different than the sputtering method as claimed. (See Safi pages 116). SPA does not a target having a dopant alloyed with the

principal metal used in the oxide. (*See* Safi pages 116). Instead two targets are used and in a first step, the sputtering occurs in the presence of a reactive gas, i.e. oxygen, and in the second step, the sputtering occurs in the absence of oxygen. (*See* Safi, page 116). Further, Safi uses a film having titanium in an amount of between 1 to 1.55%. (*See* Safi, page 117). This amount is greater than the titanium/indium atomic ratio between 0.003 and 0.050 as claimed. Safi also teaches away from using lower amounts of titanium. (*See* Safi, page 117; “The increase in R_y could be attributed to the lower Ti content of the films at high values of P_{in}^{DC} .”). Therefore, for at least these reasons, Safi fails to teach or suggest every element, and thus Claim 1 is patentable over Safi.

4. Dependent Claims

Claims 3-8 and 17-27 depend from independent Claim 1. Accordingly, Claims 3-8 and 17-27 incorporate the features of independent Claim 1 and are patentable over the cited references for at least the same reasons as independent Claim 1.

D. Conclusion

In view of the foregoing, it is believed that this application is in condition for allowance, and a Notice thereof is respectfully requested.

Applicant’s undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3536. All correspondence should be directed to the address given below.

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